

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A polymer of Claim 7, wherein ~~comprising~~ ~~units capable of having a cationic charge at a pH of from about 4 to about 12;~~ ~~provided that~~ said polymer has an average cationic charge density of 2.77 or less units per 100 daltons molecular weight at a pH of from about 4 to about 12.
2. (Currently amended) A polymer according to Claim 1, ~~further comprising~~  
a) ~~units capable of having a cationic charge at a pH of from about 4 to about 12;~~  
~~provided that said~~ wherein said polymer is a suds/foam stabilizer ~~has~~ having an average cationic charge density from about 0.01 to about 2.75 units per 100 daltons molecular weight at a pH of from about 4 to about 12.
3. (Currently amended) A polymer according to Claim 1, ~~further comprising:~~  
ii) ~~one or more units having one or more hydroxyl groups, provided that the~~  
wherein said polymer has a hydroxyl group density of from about 0.5 or less as measured by the Hydroxyl Group Density Equation  
~~as outlined in greater detail below; and/or~~  
iii) ~~one or more units having one or more hydrophobic groups,~~  
~~preferably the hydrophobic groups are selected from the group~~  
~~consisting of non hydroxyl groups, non cationic groups, non-~~  
~~anionic groups, non carbonyl groups, and/or non H bonding~~  
~~group, more preferably the hydrophobic groups are selected~~  
~~from the group consisting of alkyls, cycloalkyls, aryls,~~  
~~alkaryl, aralkyls and mixtures thereof.~~
4. (Currently amended) A polymer according to Claim 1, wherein said polymer ~~further comprises:~~  
iv) units capable of having an anionic charge at a pH of from about 4 to about 12;

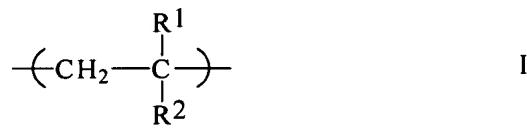
- v) units capable of having an anionic charge and a cationic charge at a pH of from about 4 to about 12;
- vi) units having no charge at a pH of from about 4 to about 12; and
- vii) mixtures of units (iv), (v), (vi), and (vii).

5. (Original) A polymer according to Claim 2, wherein said polymer has an average molecular weight of from about 1,000 to about 2,000,000 daltons.

6. (Original) A polymer according to Claim 1, wherein said polymer has an average cationic charge density of about 0.75 to about 2.25 units per 100 daltons molecular weight at a pH of about 4 to about 12 and a molecular weight of about 10,000 to about 100,000 daltons.

7. (Currently amended) A polymer comprising consisting essentially of:

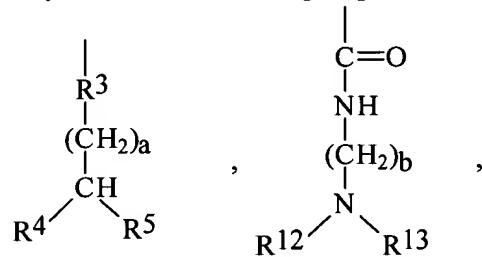
A. at least one cationic monomeric unit A, capable of having a cationic charge at a pH in the range of from about 4 to about 12, having a Formula I:

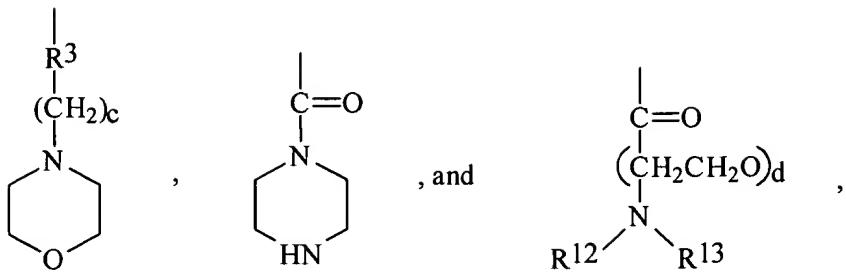


wherein

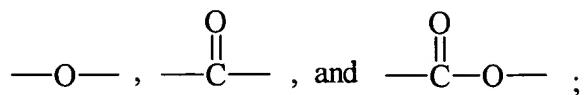
$\text{R}^1$  is H or an alkyl having 1 to 10 carbon atoms,

$\text{R}^2$  is a moiety selected from the group consisting of



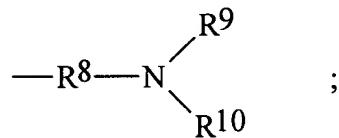


wherein R<sup>3</sup> is selected from the group consisting of



a is an integer from 0 to 16; b is an integer from 2 to 10; c is an integer from 2 to 10; d is an integer from 1 to 100;

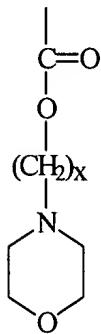
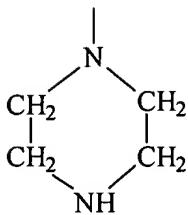
R<sup>4</sup> and R<sup>5</sup> are independently selected from the group consisting of -H, and



R<sup>8</sup> is independently selected from the group consisting of a bond and an alkylene having 1 to 18 carbon atoms;

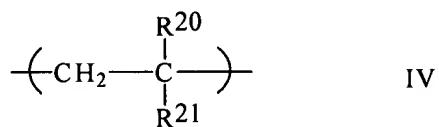
R<sup>9</sup> and R<sup>10</sup> are independently selected from the group consisting of -H, alkyl having 1 to 10 carbon atoms;

R<sup>12</sup> and R<sup>13</sup> are independently selected from the group consisting of H and alkyl having from 1 to 10 carbon atoms;



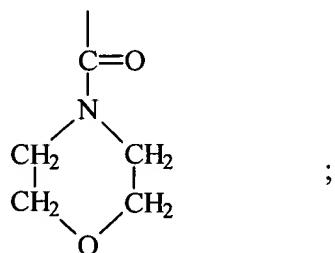
wherein x is an integer from 2 to 10;

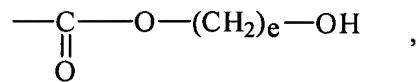
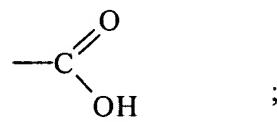
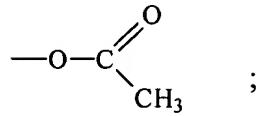
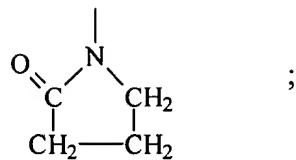
B. at least one monomeric unit B selected from the group consisting of:  
a monomeric unit of Formula IV



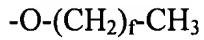
wherein  $\text{R}^{20}$  is selected from the group consisting of H and  $\text{CH}_3$ ;

$\text{R}^{21}$  is selected from the group consisting of:

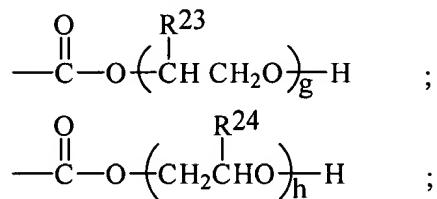




wherein e is an integer from 3 to 25;



wherein f is an integer from 0 to 25;

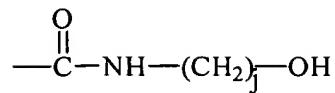


wherein g is an integer from 1 to 100,

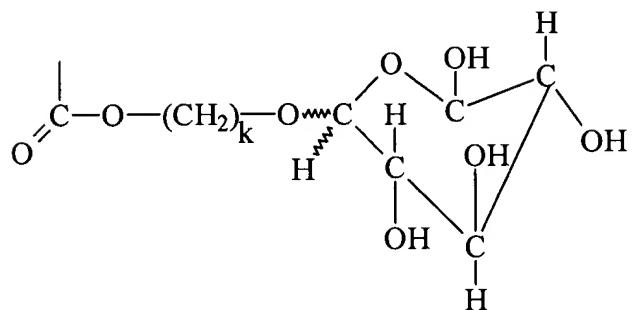
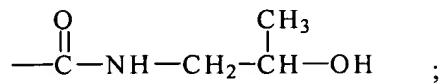
h is an integer from 1 to 100,

R<sup>23</sup> is -H, -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub>,

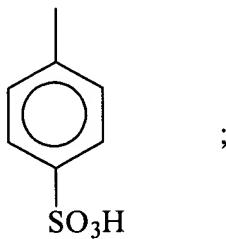
$R^{24}$  is  $-CH_3$  or  $-C_2H_5$ ;



wherein  $j$  is an integer from 1 to 25;

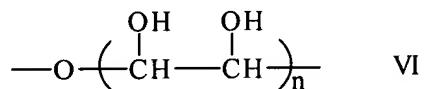


wherein k is an integer from 1 to 25;



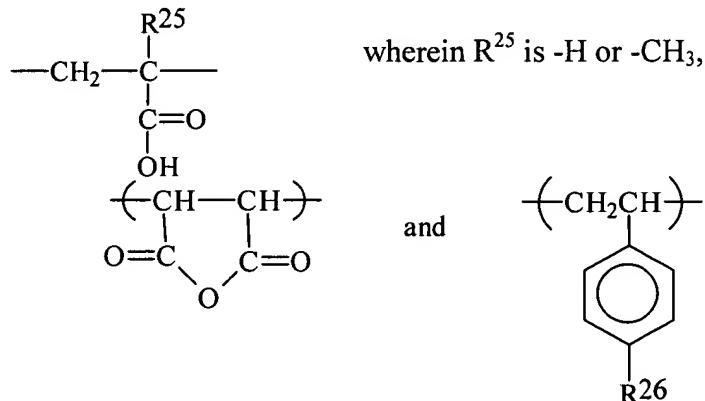
-NH-(CH<sub>2</sub>)<sub>m</sub>-NH<sub>2</sub>·HCl, wherein m is an integer from 1 to 25; and

a polyhydroxy monomeric unit of Formula VI:

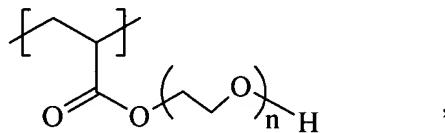
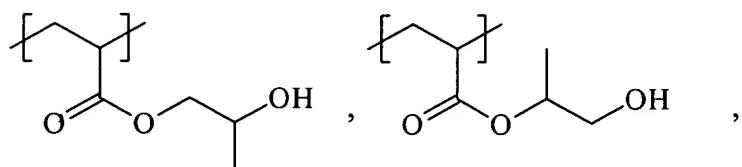
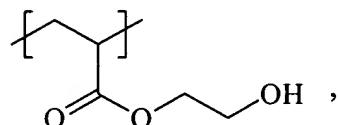


wherein n is an integer from 1 to 50; and

C. optionally at least one monomeric unit C selected from the group consisting of:



wherein  $\text{R}^{26}$  is -H or CH<sub>3</sub> , wherein said at least one monomeric unit B is selected from the group consisting of:

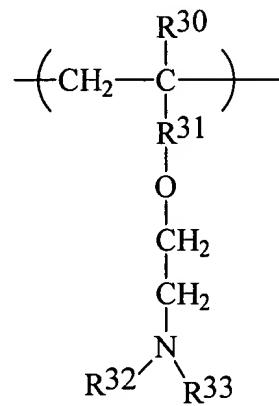


wherein n is an integer from 1 to 50.

8. (Original) The polymer of Claim 7, wherein said polymer comprises at least one

said monomeric unit A, at least one said monomeric unit B and at least one said monomeric unit C.

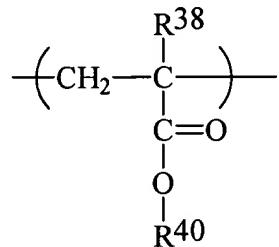
9. (Original) The polymer of Claim 7, wherein said at least one monomeric unit A is selected from the group consisting of:



wherein R<sup>30</sup> is H or -CH<sub>3</sub>,

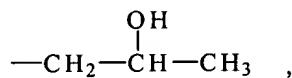
wherein R<sup>31</sup> is a bond or  $\text{---}\overset{\text{O}}{\underset{\text{C}}{\text{=}}}\text{---}$ , and  
R<sup>32</sup> and R<sup>33</sup> are -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub>.

10. (Original) The polymer of Claim 9, wherein said polymer is a terpolymer, said at least one monomeric unit B is selected from the group consisting of:



wherein R<sup>38</sup> is selected from the group consisting of H and CH<sub>3</sub> and

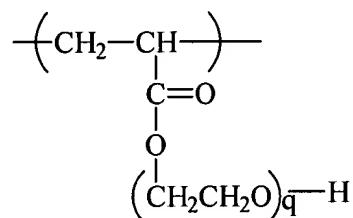
R<sup>40</sup> is selected from the group consisting of -CH<sub>2</sub>CH<sub>2</sub>-OH and



and isomers thereof,

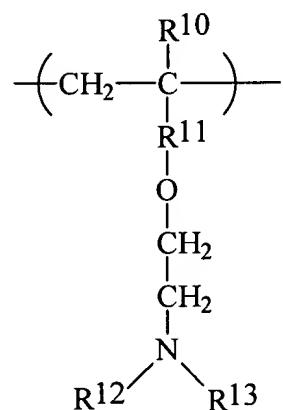
    said terpolymer comprising said at least one monomeric unit C,  
    wherein the molar ratio of said monomeric unit A : monomeric unit B : monomeric unit C  
is 1 to 9 : 1 to 9 : 1 to 6 respectively.

11. (Original) The polymer of Claim 7, wherein the at least one monomeric unit B has the formula:



wherein q ranges from 1 to 12.

12. (Original) The polymer of Claim 11, wherein the polymer is a terpolymer, said at least one monomeric unit A is selected from the group consisting of:



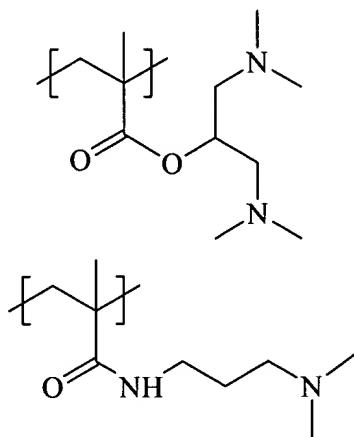
wherein R<sup>10</sup> is H or CH<sub>3</sub>,

R<sup>11</sup> is a bond or  $\text{---} \overset{\text{O}}{\underset{\text{C}}{\text{=}}} \text{---}$ , and R<sup>12</sup> and R<sup>13</sup> are -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub>, and said monomer

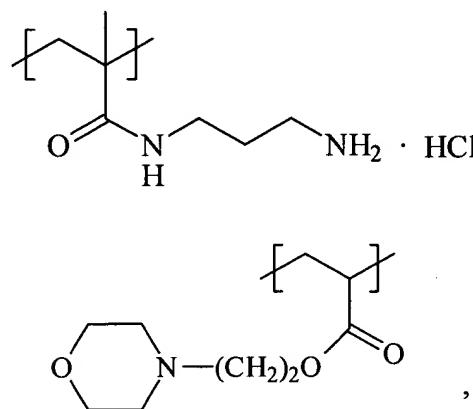
comprises said at least one monomeric unit C.

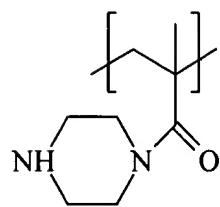
13. (Original) The polymer of Claim 12, wherein the molar ratio of monomeric unit A : monomeric unit B : monomeric unit C ranges from 1 to 9 : 1 to 9 : 1 to 3 respectively.

14. (Withdrawn) The polymer of Claim 7, wherein said at least one monomeric unit A has a formula selected from the group consisting of:

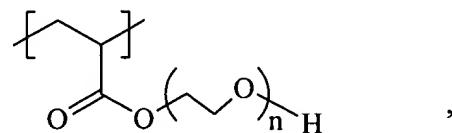
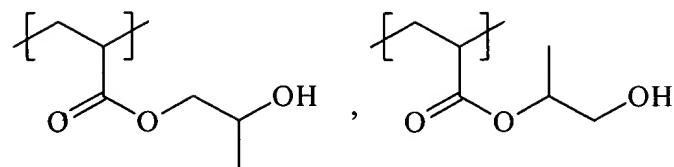
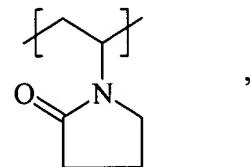
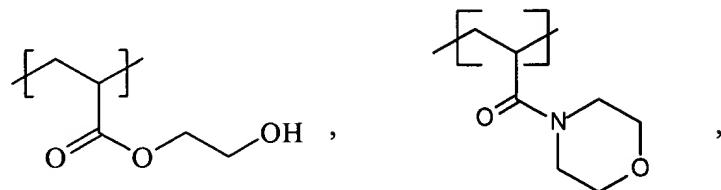


15. (Withdrawn) The polymer of Claim 7, wherein said at least one monomeric unit A has a formula selected from the group consisting of:

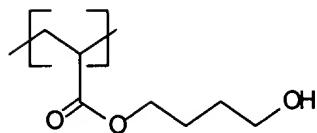
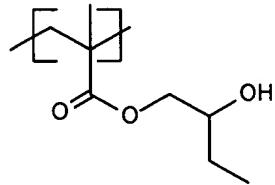
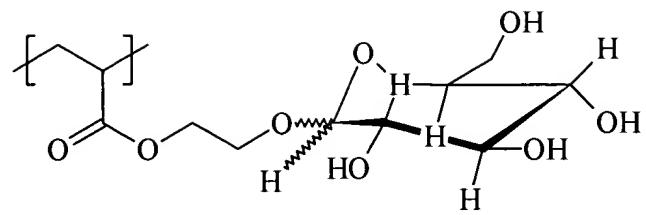




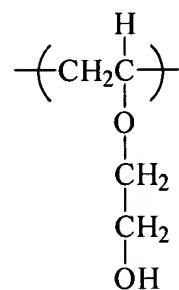
16. (Original) The polymer of Claim 7, wherein said at least one monomeric unit B is selected from the group consisting of:



wherein n is an integer from 1 to 50,



, and



17. (Original) The polymer of Claim 7, selected from the group consisting of:  
 poly(HEA-co-DMAM-co-AA) terpolymer,  
 poly(HPA-co-DMAM-co-AA) terpolymer, and  
 poly(PEG-acrylate-co-DMAM-co-AA) terpolymer.

18. (Original) The polymer of Claim 7, selected from the group consisting of:  
 poly(HEA-co-DMAM) copolymer, poly(DMAM-co-butylvinylether) copolymer and  
 poly(2-diethylaminoethylvinyl ether-co-ethyleneglycol monovinyl ether).

19. (Withdrawn) A method for cleaning hair or skin comprising applying an effective amount of a cleaning composition comprising the polymer of Claim 1 and at least one deterotive surfactant to hair or skin in need of cleaning, provided that a 10% aqueous solution of said composition has a pH from about 4 to about 9.

20. (Withdrawn) The method of Claim 19, wherein said composition further comprises at least one member of the group consisting of a pearlizing agent, a silicone hair conditioning agent, and an antidandruff ingredient.

21. (Withdrawn) The method of Claim 20, wherein said composition comprises:

- a) said pearlizing agent
- b) a nonionic surfactant
- c) an amphoteric surfactant
- d) a glycol emulsifier
- e) water.

22. (Withdrawn) The method of Claim 20, wherein said composition comprises at least one amphoteric surfactant and said amphoteric surfactant comprises at least one member of the group consisting of:

the alkali salts of alkyl amphodipropionates, alkyl amphodiacetates, alkyl amphoglycinates, alkyl amphopropyl sulfonates and alkyl amphopropionates wherein alkyl represents an alkyl group having 6 to 20 carbon atoms.

23. (Withdrawn) The method of Claim 22, wherein in said at least one amphoteric surfactant the alkyl group is derived from coconut oil or is a lauryl group.

24. (Withdrawn) A method for cleaning hair or skin comprising applying an effective amount of a cleaning composition comprising the polymer of Claim 5 and at least one surfactant to hair or skin in need of cleaning.

25. (Withdrawn) A composition for cleaning hair or skin comprising:  
the polymer of Claim 1,  
at least one deterotive surfactant, and at least one member of the group consisting of a pearlizing agent, a silicone hair conditioning agent, and an antidandruff ingredient, provided that a 10% aqueous solution of said composition has a pH from about 4 to about 12.

26. (Withdrawn) A composition for cleaning hair or skin comprising:  
the polymer of Claim 7,  
at least one surfactant, and at least one member of the group consisting of a pearlizing agent, a silicone hair conditioning agent, and an antidandruff ingredient.

27. (Withdrawn) The composition of Claim 26, wherein said silicone compound is an alpha, omega-trimethylsilyl-polydimethylsioloxane having a viscosity at 25°C of at least 25 centistokes and less than 60,000 centistokes.

28. (Withdrawn) A method for washing a fabric article in a washing medium comprising:  
applying an effective amount of a laundry cleaning composition comprising the polymer of Claim 1 and at least one detergent surfactant to a fabric article in need of cleaning.

29. (Withdrawn) The method of Claim 28, wherein said composition washes a colored fabric article.

30. (Withdrawn) The method of Claim 28, wherein said composition comprises at least one member of the group consisting of an aminosilicone, a Gemini surfactant, a detergency builder, a bleach, an activator for percompound bleach, a soil suspending agent, a soil antiredeposition agent, a foam suppressant agent and a fabric softener.

31. (Withdrawn) The method of Claim 28, wherein said composition comprises a foam

suppressant agent.

32. (Withdrawn) A method for washing a fabric article in a washing medium comprising:

applying an effective amount of a laundry cleaning composition the polymer of Claim 7 and at least one detergent surfactant to a fabric article in need of cleaning.

33. (Withdrawn) A detergent composition for washing a fabric article comprising:

the polymer of Claim 1;

at least one detergent surfactant; and

at least one member of the group consisting of an aminosilicone, a Gemini surfactant, a detergency builder, a bleach, an activator for percompound bleach, a soil suspending agent, a soil antiredeposition agent, a foam suppressant agent and a fabric softener;

provided that a 10% aqueous solution of said detergent composition has a pH of from about 4 to about 12.

34. (Withdrawn) A method for extinguishing fire comprising applying a foam to a fire, wherein the foam comprises a foaming agent and a polymer of Claim 1.

35. (Withdrawn) A method for treating agricultural substrate selected from the group consisting of plants, soil or seed comprising,

applying to the substrate a foam comprising at least one agricultural chemical selected from the group consisting of a herbicide, a pesticide, and a fungicide, a foaming agent and a polymer of Claim 1.

36. (Withdrawn) A method comprising, injecting into a subterranean formation, a foam comprising a foaming agent and a polymer of Claim 1.

37. (Withdrawn) A method for shaving hair from skin comprising applying foam shaving cream to the skin, said shaving cream comprising a foaming agent and a polymer of Claim

1.

38. (Withdrawn) A method for shaving hair from skin comprising applying a shaving gel to the skin, said gel comprising a foaming agent and a polymer of Claim 1.

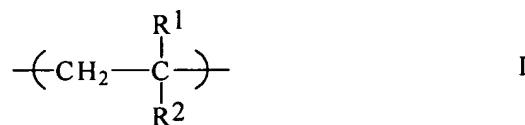
39. (Withdrawn) A method comprising applying a depilatory foam to skin, said foam comprising a foaming agent and a polymer of Claim 1.

40. (Withdrawn) A method of cleaning hard bathroom surfaces comprising applying to said surfaces a foam cleaner comprising a foaming agent and a polymer of Claim 1.

41. (Withdrawn) A process for making paper comprising aiding retention of titanium dioxide on the paper during the paper making comprising treating the paper with an aqueous solution comprising titanium dioxide and a polymer of Claim 1.

42. (New) A polymer consisting of:

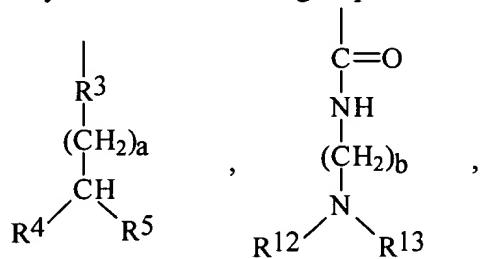
A. at least one cationic monomeric unit A, capable of having a cationic charge at a pH in the range of from about 4 to about 12, having a Formula I:

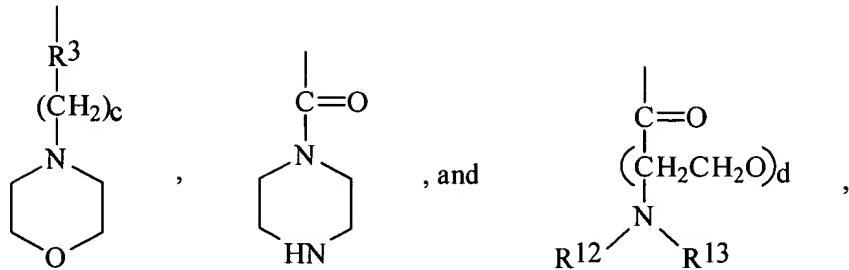


wherein

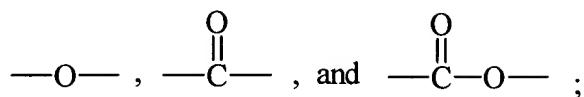
$\text{R}^1$  is H or an alkyl having 1 to 10 carbon atoms,

$\text{R}^2$  is a moiety selected from the group consisting of



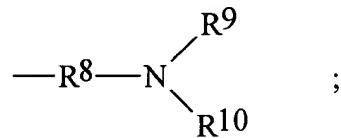


wherein R<sup>3</sup> is selected from the group consisting of



a is an integer from 0 to 16; b is an integer from 2 to 10; c is an integer from 2 to 10; d is an integer from 1 to 100;

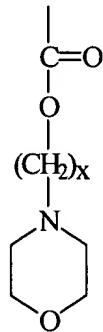
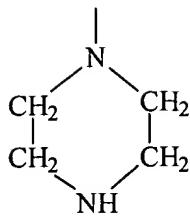
$R^4$  and  $R^5$  are independently selected from the group consisting of -H, and



$R^8$  is independently selected from the group consisting of a bond and an alkylene having 1 to 18 carbon atoms;

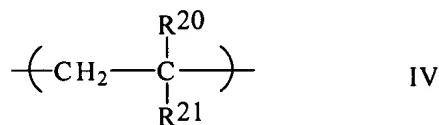
$R^9$  and  $R^{10}$  are independently selected from the group consisting of -H, alkyl having 1 to 10 carbon atoms;

$R^{12}$  and  $R^{13}$  are independently selected from the group consisting of H and alkyl having from 1 to 10 carbon atoms;



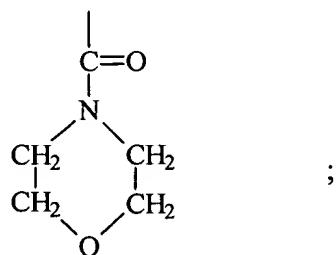
wherein x is an integer from 2 to 10;

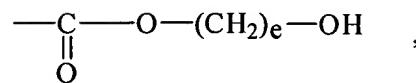
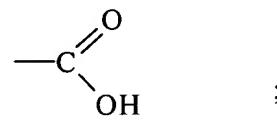
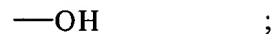
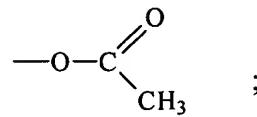
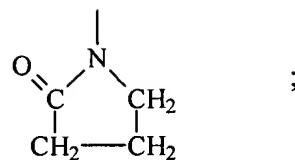
B. at least one monomeric unit B selected from the group consisting of:  
a monomeric unit of Formula IV



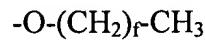
wherein  $\text{R}^{20}$  is selected from the group consisting of H and  $\text{CH}_3$ ;

$\text{R}^{21}$  is selected from the group consisting of:

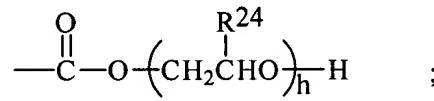
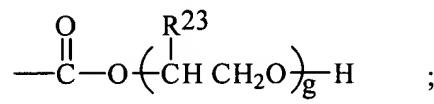




wherein e is an integer from 3 to 25;



wherein f is an integer from 0 to 25;

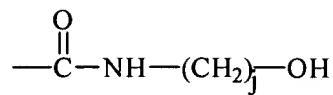


wherein g is an integer from 1 to 100,

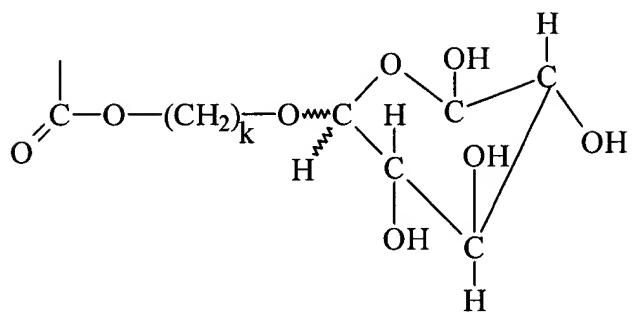
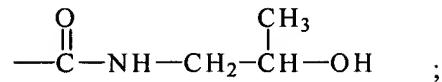
h is an integer from 1 to 100,

R<sup>23</sup> is -H, -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub>,

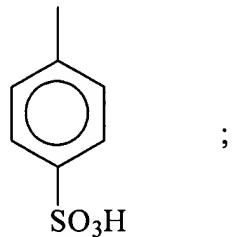
R<sup>24</sup> is -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub>;



wherein  $j$  is an integer from 1 to 25;

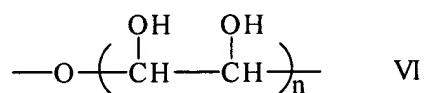


wherein k is an integer from 1 to 25;



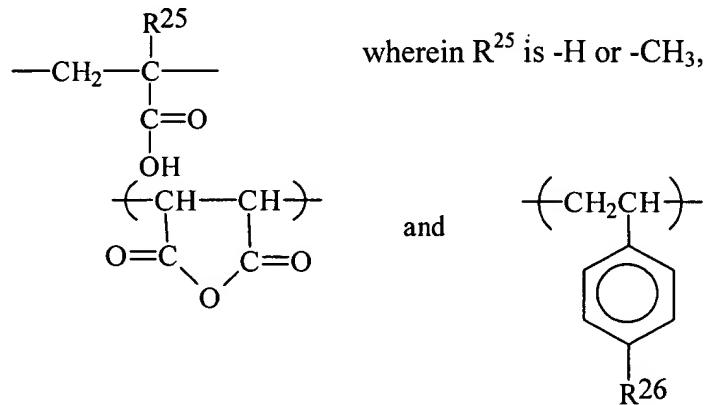
-NH-(CH<sub>2</sub>)<sub>m</sub>-NH<sub>2</sub>·HCl, wherein m is an integer from 1 to 25; and

a polyhydroxy monomeric unit of Formula VI:

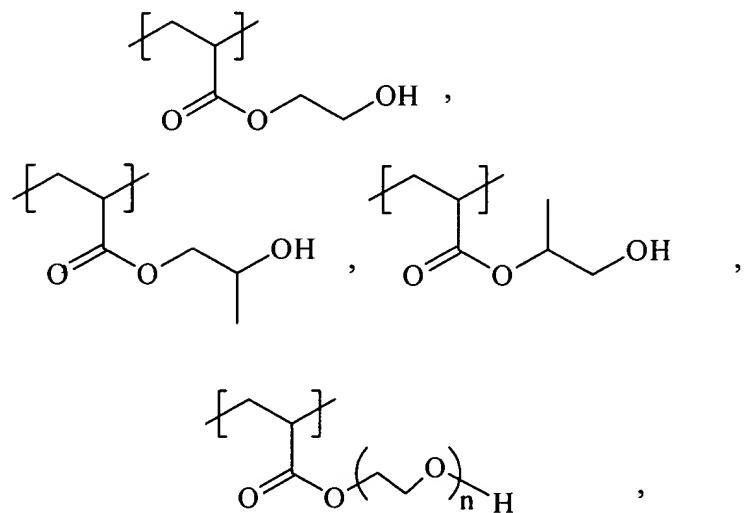


wherein n is an integer from 1 to 50; and

C. optionally at least one monomeric unit C selected from the group consisting of:



wherein R<sup>26</sup> is -H or CH<sub>3</sub> , wherein said at least one monomeric unit B is selected from the group consisting of:



wherein n is an integer from 1 to 50.